NCBN Data Stewardship-Staff Roles and Responsibilities

Role	Programmatic Responsibility	Data Stewardship Responsibilities
Project Crew Member	Collect, record, and verify data	Obtain training in data management for the project. Read and follow project protocols, study plans, and relevant NPS guidance. Communicate with Crew Leader, Project Leader, and Data Manager. Record and verify observed or measured data values. Schedule and perform regular data transfer and backup. Review, verify, and correct field data. Assist with data and procedural documentation, especially deviations from the protocol or study plan.
Project Crew Leader	Supervise crew	Obtain training in data management for the project. Ensure crew members receive data management training and briefings. Read and follow all protocol, project, and relevant Network-level guidelines. Communicate with Crew Members, Project Leader, and Data Manager. Ensure data are regularly transferred, backed up, verified, and entered into the appropriate NPS database(s). Assist with data and procedural documentation.

Role	Programmatic Responsibility	Data Stewardship Responsibilities
Data/GIS Specialist or Technician	Process and manage data	Obtain briefings about projects and related data to understand the geospatial and technical requirements and relevance. Communicate with other participants in the project to the extent necessary to accomplish assigned tasks. Perform assigned level of technical data management and/or GIS activities, including data entry, data conversion, and documentation. Work on overall data quality and stewardship with Project Leaders, Resource Specialists, and the Network Data Manager.
Information Technology / Systems Specialist	Provide IT/IS support	Provide and maintain an information systems and technology foundation to support data management. Advise project participants about capabilities of hardware and software resources to support project and program objectives. Work with Database Manager to resolve hardware and software issues relating to database functions and availability.
Project Leader	Oversee and direct project operations	Ensure Crew Leader receives pertinent training and briefings. Communicate with Crew Leader, Data Manager, and I&M Network Coordinator. Complete project documentation describing the who, what, where, when, why and how of a project. Develop, document and implement standard procedures for field data collection and data handling. Enact and supervise quality assurance and quality control measures for the project. Supervise and certify all field operations, including staff training, equipment calibration, species identification, and data collection. Supervise or perform data entry, verification and validation. Maintain concise explanatory documentation of all deviations from standard procedures. Ensure documentation of important details of each field data

Role	Programmatic Responsibility	Data Stewardship Responsibilities
		collection period. Maintain hard copies of data forms and send original data forms to archive on a regular basis. Work with program coordinators to identify analysis and reporting mechanisms, and to establish a schedule for regular project milestones such as data collection periods, data processing target dates, and reporting deadlines. Produce regular summary reports and conduct periodic trend analysis of data, store the resulting reports, and make them available to users. Act as the main point of contact concerning data content. **The project leader works closely with the data manager to:** Develop quality assurance and quality control procedures specific to project operations. Identify training needs for staff related to data management philosophy, database software use, quality control procedures, etc. Coordinate changes to the field data forms and the user interface for the project database. Fully document and maintain master data. Identify sensitive information that requires special consideration prior to distribution. Manage the archival process to ensure regular archival of project documentation, original field data, databases, reports and summaries, and other products from the project. Define how project data will be transformed from raw data into meaningful information and create data summary procedures to automate and standardize this process. Identify and prioritize legacy data for conversion; convert priority data sets to a modern format.

Role	Programmatic Responsibility	Data Stewardship Responsibilities
		Increase the interpretability and accessibility of existing natural resource information. **Note:** The Project Leader is often a resource specialist, in which case the associated responsibilities for data authority apply (see resource specialist role). A Project Leader without the required background to act as an authority for the data will consult with and involve the appropriate Resource Specialists.
Resource Specialist	Understand the project and make decisions about the data	Understand the objectives of the project, the resulting data, and their scientific and management relevance. Guide development of an Information Needs Assessment based on the objectives of the project. Make decisions about data with regard to validity, utility, sensitivity, and availability. Describe, publish, release, and discuss the data and associated information products. **Note:** The Resource Specialist serving as a Project Leader is also responsible for the duties listed with that role.
GIS Manager	Support park management objectives with GIS and resource information management	Coordinate and integrate local GIS and resource information management with Network, Regional, and National standards and guidelines. **The GIS specialists will work in collaboration with project leaders to:** Determine the GIS data and analysis needs for the project. Develop procedures for field collection of spatial data including the use of GPS and other spatial data collection techniques. Display, analyze, and create maps from spatial data to meet project objectives. Properly document data in compliance with spatial metadata standards. **GIS specialists will also work directly with data managers to:** Design databases and other applications for the network.

Role	Programmatic Responsibility	Data Stewardship Responsibilities
		Create relationships between GIS and non-spatial data and create database and GIS applications to facilitate the integration and analysis of both spatial and non-spatial data. Establish and implement procedures to protect sensitive spatial data according to project needs. Develop and maintain an infrastructure for metadata creation and maintenance. Ensure that project metadata are created and comply with national and agency standards.
Network Data Manager	Ensure inventory and monitoring data are organized, useful, compliant, safe, and available	Assist in developing and implementing procedures to ensure that I&M data collected by NPS staff, cooperators, researchers and others are entered, quality-checked, analyzed, reported, archived, documented, cataloged, and made available to others for management decision-making, research, and education. Provide guidance and support, to the extent possible, to extend Network standards and procedures to studies and data funded by park base and other funding sources to promote integration and availability of datasets. Provide overall Network planning, training, and operational support for the awareness, coordination, integration of data and information management activities, including people, information needs, data, software, and hardware. Serve as Point of Contact for National Park Service database applications (NPSpecies, NatureBib, Dataset Catalog) Coordinate internal and external data management activities. Assign and enforce data stewardship responsibilities. Review and approve all data acquisition plans, hardcopy and electronic field forms, and data dictionaries. Participate in development of Information Needs Assessments. Communicate with Crew Leader, Project Leader, I&M Network

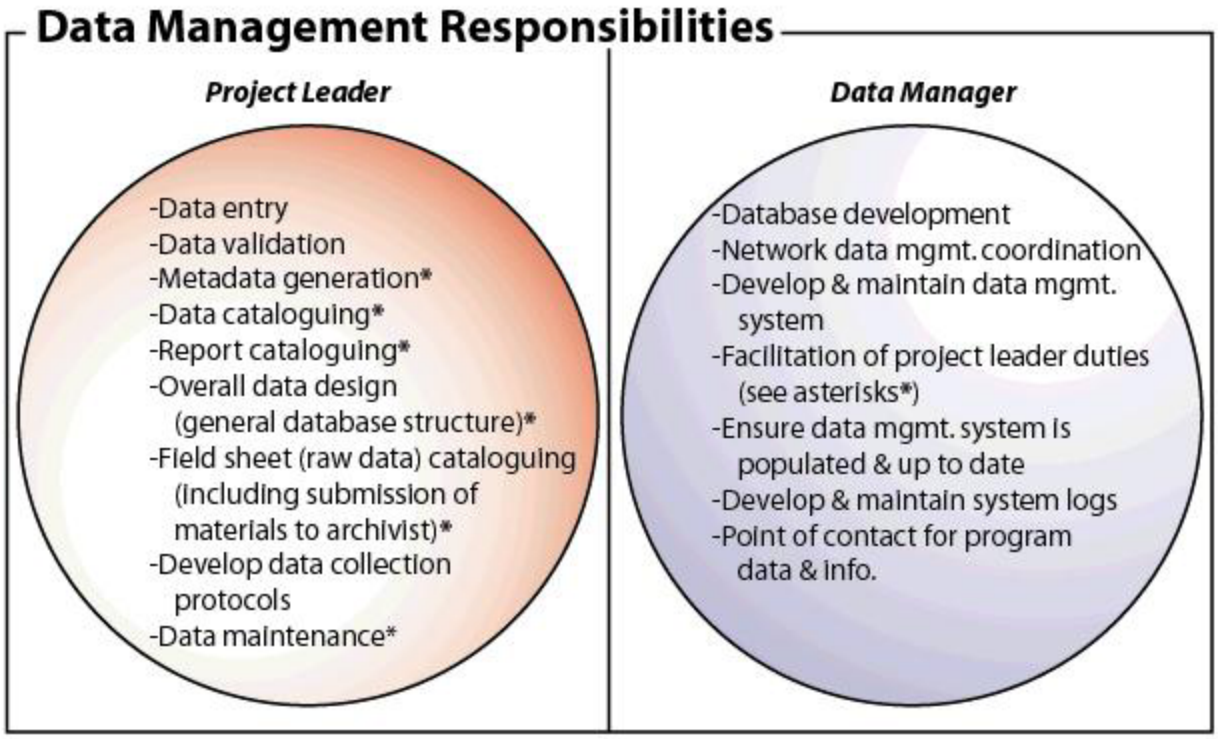
Role	Programmatic Responsibility	Data Stewardship Responsibilities
		Coordinator, and Park GIS/Data Management office. Develop and maintain overall Network and individual Vital Sign data management operating guidelines and relationship to national standards and procedures. Develop and maintain the infrastructure for metadata creation, project documentation, and project data management. Create and maintain project databases in accordance with best practices and current program standards. Provide training in the theory and practice of data management tailored to the needs of project personnel. Develop ways to improve the accessibility and transparency of digital data. Establish and implement procedures to protect sensitive data according to project needs. Collaborate with GIS Specialists to integrate tabular data with geospatial data in a GIS system in a manner that meets project objectives. **Data managers will also work closely with the project leader to:** Define the scope of the project data and create a data structure that meets project needs. Become familiar with how the data are collected, handled, and used. Review quality control and quality assurance aspects of project protocols and standard procedure documentation. Identify elements that can be built into the database structure to facilitate quality control, such as required fields, range limits, pick-lists and conditional validation rules. Create a user interface that streamlines the process of data entry, review, validation, and summarization that is consistent with the

Role	Programmatic Responsibility	Data Stewardship Responsibilities
		capabilities of the project staff. Develop automated database procedures to improve the efficiency of the data summarization and reporting process. Make sure that project documentation is complete, complies with metadata requirements, and enhances the interpretability and longevity of the project data. Ensure regular archival of project materials. Inform project staff of changes and advances in data management practices. Additional examples of the duties and responsibilities of the network data managers are listed in I&M Program Vision and Organizational Framework document "Network Data Manager Overview of Responsibilities". **NOTE:** Data Managers with Prototype Monitoring Programs have the same basic duties and responsibilities as the network data managers but also are responsible for mentoring and training others and developing and testing new approaches to data analysis, synthesis, and reporting of monitoring results.
Database Manager	Know and use databases and applications	Install, maintain, and support specific database software applications and NPS database applications. Work with Information Technology Specialists to resolve hardware and software issues.
Curator	Oversee all aspects of the acquisition, documentation, preservation, and use of park collections	Know park natural resource collections Conduct accessioning, cataloging, legal, and other documentation of collections Manage collections databases Recognize objects needing conservation treatment Recommend and refer treatment to the appropriate facility Work with Network Data Manager to acquire and process data related to natural resource collections

Role	Programmatic Responsibility	Data Stewardship Responsibilities
Statistician or Biometrician	Analyze data and present information	Work with the Network Ecologist to analyze and report data according to established protocols. Work with the Network Data Manager to acquire and process raw data from databases and store derived data and information after analysis
Network Ecologist	Integrate science in network activities	Ensure useful data are collected and managed by integrating natural resource science in network activities and products, including objective setting, sample design, data analysis, synthesis, and reporting. Assist with development and modification of monitoring protocols and inventory study plans. Work with the Network Data Manager to incorporate data management in monitoring protocols. Participate in the development of Information Needs Assessments based on the objectives of the project. Guide and/or perform statistical and other analyses of network data. Contribute to the synthesis and reporting of data and information. Provide guidance and support, to the extent possible, to extend Network standards and procedures to studies and data funded by park base and other funding sources to promote integration and availability of datasets.
Network Coordinator	Coordinate all network activities	Ensure programmatic data and information management requirements are met as part of overall Network business. Communicate with Network staff, park staff at all levels, and other appropriate audiences to support and emphasize data management as a critical aspect of network business Work with Network Data Manager regarding data management policy and guidelines, budget, staffing, and training. Hold Network staff accountable for responsibilities involving data management.

Role	Programmatic Responsibility	Data Stewardship Responsibilities
I&M Data Manager (National Level)	Provide service-wide database availability and support	Provide services to receive, convert, store, and archive data in service-wide databases. Work with Network Data Manager to resolve local issues involving the access and use of inventory and monitoring databases. Provide training where possible. Design and maintain standardized, master databases for Servicewide planning, decision-making, and accountability (e.g., NPSpecies, NatureBib, Dataset Catalog, Database Template, GIS tools). Collaborate with networks to help develop overall data management vision and approach, and continual improvement of specific tools. Coordinate establishment of standards for naming conventions and content of data management plans and monitoring protocols. Promote collaboration and integration with other divisions and programs including the GIS community, fire program, air resources, water resources, geologic resources, etc. Facilitate coordination and collaboration among the parks and networks by providing examples of good database designs with flexibility to allow adjustments for different situations.
Other End Users	Use and apply Network services and products	These 'information consumers' include park managers and superintendents, researchers, staff from other agencies, and the public. End users at all levels are generally responsible for providing necessary and requested feedback, review, and comments on various products in order to sustain the continuous improvement of network operations and services. End users are responsible for the appropriate use and application of data and derived products.

Figure 2.1 Shared Responsibilities for each project
[from CAKN]


Data Management Responsibilities
Project Leader
-Data entry
-Data validation
-Metadata generation*
-Data cataloguing*
-Report cataloguing*
-Overall data design (general database structure)*
-Field sheet (raw data) cataloguing (including submission of materials to archivist)*
-Develop data collection protocols
-Data maintenance*
Data Manager
-Database development
-Network data mgmt. coordination
-Develop & maintain data mgmt. system
-Facilitation of project leader duties (see asterisks*)
-Ensure data mgmt. system is populated & up to date
-Develop & maintain system logs
-Point of contact for program data & info.